

## Research article

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## A criterion audit of women's awareness of blood transfusion in pregnancy

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Published: 25 September 2002

Received: 25 February 2002

*BMC Pregnancy and Childbirth* 2002, **2**:7

Accepted: 25 September 2002

This article is available from: <http://www.biomedcentral.com/1471-2393/2/7>

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**Keywords:** blood transfusion, pregnancy, refuse

### Abstract

**Background:** In the Confidential Enquiry into Maternal Deaths (CEMD) Report, the very high risk of mortality in women who refuse blood transfusions is highlighted. The objectives were to establish current knowledge about, and views of transfusion in our pregnant population and to establish the level of compliance with the set audit standard.

**Method:** Questionnaire survey of 228 women, including both high and low risk pregnancies, attending ante-natal clinic between 2–9 May 2000 at the North Staffordshire Maternity Hospital, Stoke on Trent.

**Results:** The response rate was 100%. Only 43% were aware of the possible need for blood transfusion in pregnancy. If a blood transfusion was required, 92% stated that they would accept a blood transfusion in pregnancy. Four percent stated that they would not accept a transfusion because of religious reasons and risk of infection and the remaining four percent did not declare a reason.

**Conclusions:** This short survey identified that 57% of women were not aware of the possible need for blood transfusion during pregnancy. There is a need for more information to be shared on this subject with all antenatal women. Women who would refuse a transfusion need to be identified at booking and be referred for counselling and a management plan made for pregnancy, labour and delivery.

### Background

The vast majority of women accept blood transfusion if the clinical reasons for its necessity are fully and appropriately explained. However, a few women may continue to refuse transfusion because of specific personal or religious beliefs. The main group of women who may refuse for religious reasons are members of the Jehovah's Witness faith. Jehovah's Witnesses interpret a Biblical injunction

[1] as meaning that the transfusion of whole blood, or its primary components, is prohibited, even if considered life-saving.

Worldwide there are 6 million Jehovah's Witnesses [2] with 125,000 in the United Kingdom. In our district, North Staffordshire, there are 3,000 baptised Jehovah's

Witnesses of whom 400–500 are women that may present annually to the Obstetrics & Gynaecology department.

Jehovah's Witnesses will not accept transfusions of whole blood, packed red cells, white cells, plasma, and platelets [3]. However, Jehovah's Witnesses will accept non blood products such as Ringer's lactate, normal saline, hypertonic saline, dextran, gelatine (gelofusine/haemaccel), and hetastarch [3].

Matters of patient choice include immunoglobulins, clotting factors, albumin, dialysis, intra-operative cell salvage, haemodilution, and organ transplant [3].

In the CEMD the very high risk of mortality in women who refuse blood transfusion was highlighted [4]. The death rate in this group was 1 per 1,000 maternities compared with an expected incidence of less than 1 per 100,000 maternities. A survey of 147 labour wards in the United Kingdom found only two units had recommendations for the management of women who refuse blood transfusion [5].

Within the North Staffordshire ASQUAM (Achieving Sustainable Quality in Maternity) Programme we have focused on improving the management of women with massive obstetric haemorrhage. A number of areas have been addressed, including the development of a protocol for the management of women who refuse blood transfusion. We therefore undertook an audit at the North Staffordshire Maternity Unit, to establish current knowledge about, and views of transfusion in our pregnant population.

We also wished to establish the level of compliance with the following audit standard:-

"All women should be asked at booking if they would have a blood transfusion. If not, they should be referred for counselling and a management plan made for pregnancy, labour and delivery" [4].

## Methods

Two hundred and twenty eight women, of both high risk and low risk pregnancies, attending the ante-natal clinic at North Staffordshire Hospital (NHS) Trust during the period 2–9 May 2000 were asked to complete a questionnaire regarding blood transfusion.

## Results

All 228 women surveyed responded to the questionnaire:-

Forty eight percent (110) were first time mothers and 52% (117) had already had children. Of the 117 with children, 7% (8) had a blood transfusion in a previous pregnancy.

Over 57% (129) were not aware of the possible need for blood transfusion during pregnancy.

Those who were aware of the possible need for blood transfusion during pregnancy had used their General Practitioner, family and friends and the media for information about this.

Ninety two percent (210) stated that they would have a blood transfusion if required. Religious reasons and risk of infection were stated as to why the 4% (9) would not accept a blood transfusion during pregnancy and 4% (9) did not declare a reason. Ninety two percent (209) stated that they thought that mothers-to-be should be provided with more information about this very unusual complication of pregnancy.

## Discussion

This short survey identified that 57% of pregnant women were not aware of the possible need for blood transfusion during pregnancy. However, 92% stated that they thought that mothers-to-be should be provided with more information about this very unusual complication of pregnancy. Although the survey only sampled 228 women, it was adequate enough to give an insight into the need to identify women who refuse blood transfusion. Four percent stated that they would not accept a transfusion and this would be equivalent to approximately 200–300 women/year in our Unit. We feel that all units in the UK should include routine questions to identify women at booking who would refuse blood transfusion, if required. If they have concerns, they should be referred for counselling and a management plan should be made for pregnancy, labour and delivery. These issues and suggested guidelines were highlighted in the CEMD 1993–1996 [4].

Our Unit, together with the Hospital Liaison Committee for Jehovah's Witnesses, have completed a Unit guideline for the management of women who refuse blood transfusion in pregnancy whether it be for religious or other personal reasons. An information pack and consent form is also included (available on request from the author). This will be given to the patient at booking and the consent form to be signed at some point during the antenatal period.

The guideline covers areas of consent and communication with various disciplines including a Consultant Haematologist and the anaesthetic team during the booking and antenatal period. It also covers the management of haemorrhage during the antenatal, intrapartum and post partum periods. Some of these strategies are outlined in attachment 1 (please see additional file 1).

There are a number of strategies recommended for avoiding and controlling haemorrhage and anaemia without blood transfusion. These are general principles of non-blood management which include adequate preoperative preparation, use of surgical and anaesthetic techniques to limit blood loss, non-blood volume expanders, haemostatic agents for bleeding/clotting problems, surgical haemorrhage/shock, obstetric haemorrhage, and therapeutic agents and techniques for managing anaemia [6] (please see additional file 2: Leaflet).

## Conclusion

This audit was undertaken almost 2 years ago which would be considered as one of the limitations of these results. However, we are currently reauditing this criteria following the introduction of our departmental guideline for the management of women refusing blood transfusion. We are not aware of a previously conducted audit in the UK. The aim of our study is to encourage other units to undertake similar audits in their department as well as to prepare local guidelines for the management of these women who have been highlighted in the CEMD due to their increased maternal mortality and morbidity.

## Competing interests

None declared

## Author contributions

MK undertook literature search, drafted the manuscript. CR devised the data collection form, data entry, analysis and presentation of data. PW advised on aspects of management, reviewed the manuscript. NL performed the analysis and presentation of data, manuscript handling. RBJ conceived the audit question, reviewed the article.

All authors read and approved the final manuscript.

## Additional material

### Additional File 1

Guideline for Obstetric haemorrhage in women who refuse blood transfusion. Guideline produced by North Staffordshire Maternity Unit.

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[<http://www.biomedcentral.com/content/supplementary/1471-2393-2-7-S1.doc>]

### Additional File 2

Strategies for controlling Haemorrhage and anaemia without blood transfusion. Patient information leaflet produced by Stoke on Trent Hospital Liaison Committee.

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[<http://www.biomedcentral.com/content/supplementary/1471-2393-2-7-S2.doc>]

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## Pre-publication history

The pre-publication history for this paper can be accessed here:

<http://www.biomedcentral.com/1471-2393/2/7/prepub>

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